ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Invertebrate Abstract **Element Code:** IMGAS67152
Data Sensitivity: Yes

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Oxyloma haydeni haydeni*
COMMON NAME: Niobrara Ambersnail
SYNONYMS:
FAMILY: Succineidae

AUTHOR, PLACE OF PUBLICATION: For the species, Binney, 1858.

TYPE LOCALITY: NE, between Loup Fork and L'Eau qui Cort Rivers.

TYPE SPECIMEN: Unknown

TAXONOMIC UNIQUENESS:

DESCRIPTION: Per Sorensen and Nelson (2002), "Succineids generally are referred to as "ambersnails" due to the amber color of their shells. These shells are characteristically fragile, have a large aperture-to-shell length ratio, and are ovate with decreasing whorls coming to a point (Molloy 1995). NAS=*Oxyloma haydeni* (Binney) has 3 whorls forming a short spire, but differs from other species sue to several slight variations in shell morphology." Anatomical features and genetic analysis is also used to identify the various species of *Oxyloma*.

AIDS TO IDENTIFICATION: "NAS=*Oxyloma haydeni* (Binney) has 3 whorls forming a short spire, but differs from other species sue to several slight variations in shell morphology. KAS=*Oxyloma haydeni kanabensis* (Pilsbry) is distinguished from other *Oxyloma* by a more slender and drawn out spire, and a shorter aperture than in *O. haydeni*. The genus *Catinella* is also commonly found throughout the American Southwest and is often mistaken for *Oxyloma* at first glance. Upon closer examination, *Catinella* can typically be distinguished from *Oxyloma* in the field by their shorter, more robust whorls (S. Wu, pers. comm.)." (Sorensen and Nelson, 2002).

ILLUSTRATIONS:

TOTAL RANGE: Northern Arizona, and southern Utah (Kanab Canyon area).

RANGE WITHIN ARIZONA: One population occurs on the South Rim of the Grand Canyon at Indian Gardens and a second population is found at riverside marsh at –9mile in the Lee's Ferry reach.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Predators include insects, mammals, birds, and other snails.

REPRODUCTION:

FOOD HABITS:

HABITAT: The population at Indian Gardens is restricted to permanently wet areas fed by a small spring and is associated with the *Typha* and other wetland vegetation. The Lee's Ferry population is restricted to areas with damp or saturated cattail litter, common reed litter, watercress, and among sedges growing in saturated soil. The habitat of the southern Utah population is characterized by seep or spring-fed wetlands. (Sorensen and Nelson 2001, *in* Sorensen and Nelson 2002).

ELEVATION: HDMS records: "based on two records in the Heritage Data Management System (HDMS) elevation ranges from 3,120 to 3780 ft. (950-1152 m) (AGFD, unpublished data accessed 2002)".

PLANT COMMUNITY: Habitat at Indian Gardens consists of a large cottonwood (*Populus fremontii*) canopy with an under story of watercress (*Nasturtium* spp.), cattail (*Typha* spp.), seep willow (*Baccharis glutinosa*), sedges (*Carex* spp.), horsetail (*Equisetum* spp.), common reed (*Phragmites asutralis*), and coyote willow (*Salix exigua*) (Stevens and others 1997a; Sorensen and Kubly 1997, both *in* Sorensen and Nelson 2002). The habitat of the more recently discovered southern Utah population consists of cattails (*Typha* spp.), American bulrush (*Scirpus* spp.), rushes (*Juncus* spp.), sedges (*Carex* spp.), watercress (*Nasturtium* spp.), and cutleaf water parsnip (*Berula erecta*) (Meretsky and North 2000; Meretsky and others forthcoming, both *in* Sorensen and Nelson 2002).

POPULATION TRENDS: The Indian Gardens population somehow persisted through the 1996 experimental flow. This snail population is not presently being monitored, however some observations were made in 1998. Although the snail was abundant in May 1998 and in March 1999, flows in excess of 20,000 cfs inundate the habitat. Flows exceeded 22,000 cfs for extended periods in the summer of 1998 and in May 1999, and no snails were found during habitat searches in those periods. (Sorensen and Nelson 2002).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None
STATE STATUS: None
OTHER STATUS: Forest Service Sensitive (USDA, FS Region 3 1999)
Bureau of Land Management Sensitive (USDI, BLM AZ 2000, 2005)

MANAGEMENT FACTORS: Due to the high reliance on wetland habitat, de-watering is a common threat to all southwestern *Oxyloma* populations. The population near Lee's Ferry is subject to inundation from even moderate flows of the Colorado River (>25,000 cfs [708 cms]), and more than 90% of the entire habitat is inundated at 45,000 cfs or more (Spence 1996; Sorensen and Nelson 2001). However, the vegetation has been protected from scour during past flooding events, due to a re-circulating eddy along its western perimeter (Sorensen and Nelson 2001). The Indian Gardens population is threatened by trampling from off-trail hikers, large flash floods, and possible habitat loss/ degradation due to landscape maintenance (Sorensen and Kubly 1997). (Sorensen and Nelson 2002).

PROTECTIVE MEASURES TAKEN: Unknown

SUGGESTED PROJECTS: Monitor NAS populations annually to help determine presence/absence, document habitat disturbance, and population trends. Need to develop a State Conservation Agreement for non-listed NAS populations in Arizona, since both sites are subject to potential habitat loss due to natural and anthropogenic impacts.

LAND MANAGEMENT/OWNERSHIP: Both locations in Arizona are on National Park Service land.

SOURCES OF FURTHER INFORMATION

REFERENCES:

Arizona Game and Fish Department, Available at http://www.gs.state.az.us/frames/fishwild/ngame_b.htm.

Bequaert, J.C. and W.B. Miller. 1973. The mollusks of the arid southwest, with an Arizona check list. The University of Arizona Press. Tucson, Arizona. Pp. 155.

Hoffman, J. Obtained 2003. Printout from personal database of type localities for snails. Http://www.gcmrc.gov/score/WebScoreRep99/TeBiRe.htm.

NatureServe Explorer: An online encyclopedia of life [web application]. 2001. Version 1.6. Arlington, Virginia, USA: NatureServe. Available: http://www.natureserve.org/explorer. (Accessed: March 18, 2002).

SCORE, Available at http://www.gcmrc.gov/score/WebScoreRep99/TeBiRe.htm.

Sorenson, J.A. and D.M. Kubly. 1997. Investigations of the endangered Kanab ambesnail:monitoring, genetic studies, and habitat evaluation in Grand Canyon and northern Arizona. Nongame and Endangered Wildlife Program Technical Report 122. Arizona Game and Fish Department.

Sorensen, J.A., and C.B. Nelson. 2002. Interim Conservation Plan for *Oxyloma* (*Haydeni*) *kanabensis* complex and related ambersnails in Arizona and Utah. Arizona Game and Fish Department, Nongame Technical Report 192, Phoenix, Arizona. 43pp.

USDA, Forest Service Region 3. 1999. Regional Forester's Sensitive Species List.

USDI, Bureau of Land Management. 2000. Arizona BLM Sensitive Species List. Instruction Memorandum No. AZ-2000-018.

USDI, Bureau of Land Management. 2005. Arizona BLM Sensitive Species List.

Utah Division of Wildlife Resources. Available: http://www.utahcdc.usu.edu/rsgis2/Search/Display.asp?F1Nm=oxylkana.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

Jeff Sorensen, Arizona Game and Fish Department, Phoenix, AZ.

Clay B. Nelson, Arizona Game and Fish Department, Phoenix, AZ

ADDITIONAL INFORMATION:

This snail is one of several under genetic analysis.

Revised: 2002-07-19 (AMS)
2002-07-29 (SMS)
2004-01-13 (AMS)